STUDY OF THE STATEWIDE MARKET FOR FOREST PRODUCTS HARVESTING AND HAULING SERVICES
February 2009

A. Executive Summary.

In April 2008, the 123rd Maine Legislature passed, and Governor John E. Baldacci signed, an emergency Resolve, Chapter 189, to temporarily suspend certain rate-setting procedures for the forest products industry. The rate-setting procedures are set forth in Maine Revised Statutes Title 26, Chapter 18: Rates of Compensation for Forest Products Harvesting and Hauling Services. Under this law, three harvesters or haulers can petition to initiate a proceeding for a panel to determine reasonable rates of compensation to be paid for harvesting or hauling services. The suspension expires June 1, 2009. Both the rate-setting law and the Resolve suspending its operation are included in Appendix 1.

To ensure reasonable rates of compensation for the many providers of wood harvesting and hauling services in the state, and to assess the impact of Maine Revised Statutes, Title 26, Chapter 18 on these services, the Resolve directed that the Office of the Attorney General conduct a study of the statewide market for forest products harvesting and hauling services.[1]

Since April 2008, staff of the Office of the Attorney General, along with representatives of the Departments of Labor and Conservation and the State Planning Office, examined conditions within the forest products industry to determine what, if any, changes may be necessary to ensure fair competition.[2] The group conducted numerous interviews, reviewed extensive reports and academic material on the forest products industry and analyzed data collected by the Maine Department of Labor and the Maine Department of Conservation. A summary of our data gathering process is attached as Appendix 2. As directed by the Resolve, we produced a draft report for public comment ("Attorney General's Draft Interim Report for Public Comment – Resolve, Chapter 189"). We distributed the draft widely and received comments from several individuals and businesses. Formal comments are attached in Appendix 3. Many of those comments led to revisions of the draft culminating in this final report.

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[1] This study, and the authorizing Resolve, are the latest in a series of public efforts to understand and address threats to the future vitality of Maine's logging industry. The 2004 Final Report of the Committee to Study New Payment Models for the Logging Industry, prepared by the Office of Policy and Legal Analysis, provides a succinct summary of some of those recent studies.

[2] The Office of the Attorney General retained The Irland Group, of Wayne, Maine, to provide consulting services to the state agencies involved in the study.

Our understanding of our overall task was to conduct a competition analysis in the wood harvesting and hauling industry in order to ascertain whether market power held by landowners is foreclosing reasonable rates of compensation for harvesters and haulers. The goal was to assess that analysis for the purpose of making recommendations for the retention, repeal or amendment of Title 26, Chapter 18. We were unable to conduct a comprehensive competition analysis, largely because we were unable to collect sufficient data. We did not have adequate time to conduct an inventory of market participants. We also were unable to collect even a significant sampling of information from the market participants we did identify. We sought detailed information from individual harvesters, haulers and landowners as to costs, production and compensation, among other things. Appendix 2 includes the survey forms we sent to dozens of firms and individuals, very few of which were completed and returned. While we were unable to conduct the comprehensive analysis the Legislature may have envisioned, we were able to gain an understanding of some of the factors contributing to the financial hardships faced by many harvesters and haulers today. We discuss those factors, as well as the specific Resolve questions, and offer some overall observations and recommendations, though no specific proposed legislation.

The Attorney General's major observations are as follows:

- Only one landowner presently meets the definition of "forest landowner" under Title 26, Chapter 18 and no requests for a rate determination proceeding under Title 26, Chapter 18 have been filed since its inception. There are conflicting views as to whether overall compensation for harvesters and haulers has improved since its enactment and, if so, if that might be attributable, at least in part, to the mere existence of the law.

- There is clear evidence of market concentration among landowners in certain regions of the state, primarily northern and eastern Maine. However, due to our inability to obtain rate and other contract information, we were unable to determine whether those levels of concentration result in the landowners paying harvesters and haulers below-market rates.

- Over the past 20-30 years, there has been a steady shift away from industrial landowners who either employed harvesters and haulers directly or sold their wood to contractors, who in turn sold to mills ("stumpage" sales). Today, most landowners contract with self-employed harvesters and haulers under a "Contract for Logging Services" ("CLS"). The landowners themselves now sell the harvested wood directly to the mills.

- The shift to CLS operations has shifted risks and costs among landowners, harvesters and haulers. The costs of health care, disability and workers compensation insurance and retirement plans are now borne exclusively by contractors, as are the risks and expenses of equipment and fuel costs. On the other hand, landowners now bear the risks (both upside and downside) of fluctuations in the value of the wood they sell to mills.

- Advances in harvesting technology have increased productivity and reduced the number of people employed in the industry, essentially replacing labor with capital. While these advances have improved workplace safety and reduced environmental damage, high equipment costs bring significantly more financial risk to harvesting and hauling contractors and require more training for equipment operators.

- Changes in industrial demand for wood have significantly impacted the profitability of the forest products industry as a whole. The industry has increased its use of low value wood, as evidenced by a significant increase in the harvest of biomass chips.

- At this writing, all levels of the wood product supply chain are experiencing a severe cost-price squeeze. As to solid wood products, this has been true since 2006. High prices for wood pulp have masked, to some extent, the severe strains of the paper industry, though machine shutdowns and mill downtime have been on the increase.

- Rates of compensation for haulers have by many accounts become set by the cash operating cost of an overloaded truck. In addition to perceived inconsistent enforcement of load limits, which facilitates overloaded trucks, many haulers believe that a number of other state and federal regulatory requirements contribute to their declining profits (e.g. hours of service).

- While facing these rising costs, harvesters are experiencing deteriorating harvesting conditions. Harvesters report that an increase in partial harvesting has reduced per acre harvest volumes and that average tree size has declined. These changes in operating conditions mean that harvesters must work longer or travel farther to meet their quotas. Fuel, labor and equipment maintenance costs rise accordingly, while yields remain the same.

- There are three general populations of harvesting and hauling contractors, each with unique attributes resulting in unique challenges:

    - Very large, diversified contractors who often own land, as well as harvesting equipment and trucks. These firms typically have many employees, they enter into large wood contracts with mills and they have generally been able to maintain relative financial success;
    - Medium-sized contractors with large equipment "systems" who may subcontract portions of their operations to smaller contractors, as well as employing workers to perform the services; and
    - Small "independents" who typically own and operate their own harvesting or hauling equipment. These owner-operators may work directly with landowners (e.g. roadbuilding) or under a subcontract with one or more larger contractors.

- Success for harvesters and haulers in an environment of high costs and low equity requires increased business and financial skills.

- Fewer young people are entering the harvesting and hauling industry, at least in part due to the tremendous time demands, especially for owner-operators who often work after hours and weekends on endless maintenance issues.

These evolving market conditions and shifting and escalating responsibilities and risks among landowners and harvesting and hauling contractors have created new complexities in assessing the fairness of contractor compensation. As has been discovered in the process of gathering evidence for this study, contract terms and conditions have not been forthcoming and, as a rule, are not transparent.[3] This lack of transparency significantly impedes a fair and balanced assessment of how market power is used in setting rates and related contract terms and conditions.

Further compounding the difficulty in assessing and comparing market conditions is the tremendous variability in harvesting conditions and operations, types of equipment used, functions performed and methods of compensation among contractors and forest landowners. As an example, the recent volatility in energy prices over relatively short time frames, which has presented significant challenges to the financial viability of harvesters and haulers, is not addressed uniformly within contracting relationships. Indeed, it may not be addressed at all under contract terms that are fixed.

This industry is complex and dynamic, and business practices and forest conditions vary across the state. Any compact summary, such as we offer here, will necessarily omit details that some may consider important or make generalizations that have exceptions. Further, we often had to exercise judgment and rely on experience of the working group to develop conclusions where we had conflicting statements from interviewees and commenters.

Based upon the observations described above, the Attorney General makes the following recommendations:

- Consider instituting uniform, statewide application of any rate-setting mechanism for the forest products industry in one of two ways
    - Broadening the definition of "forest landowner" in Title 26, Chapter 18 to ensure that the law is more meaningful; or
    - Looking to the Maine Agricultural Marketing and Bargaining Act (Title 13, §§ 1953-1965) for provisions that might be beneficial for forest products harvesters and haulers.

- Educate people involved in the forest products industry about the laws that govern the classification of workers. (Misclassification of workers as "independent contractors" when they are actually in employment relationships results in loss of income and benefits to the workers, as well as loss of revenue to worker protection programs such as unemployment insurance and workers compensation.)

- Promote regular and more uniform enforcement of highway load limits and other transportation rules (for all trucking operations not just log hauling). Increasing legal load limits on Interstate-95 would also help reduce costs to truckers.

[3] The legislation directing the Attorney General to conduct this study did not include the authority to compel information. Thus, we were limited to gathering information on a voluntary basis. While the Attorney General has pre-existing power under state antitrust law (10 M.R.S.A. § 1107) to issue summonses, the Attorney General may only exercise that authority relative to suspected violations of state antitrust laws.

- Engage the University of Maine to assess the feasibility of collecting and publishing data on costs and business practices related to harvesting and hauling of forest products.

- Promote professional development in the business and economics of capital equipment financing and accounting.

B. Changes in Labor Markets for the Harvesting and Hauling Industries.

Technological, demographic, market and social changes have combined to make the harvesting industry significantly different than it was a generation ago. Gone are the days of chainsaws, lumber camps and river log drives. Gone too are the vertically integrated firms that owned the land, trees, harvesting equipment and mills, and that paid harvesting crews hourly wages, as had been common in some areas of the state.[4]

Today's harvesters and haulers are primarily contractors operating under a CLS. They are paid for what they produce - by the ton for the harvester, by the mile or the trip for the hauler. The challenges of the forest products industry as a whole – globalization,[5] particularly of the pulp and paper sector, rising energy costs, offshore production of value-added products such as furniture, a sharp decline in the housing market, increased competition for forest land from residential and recreational development interests – have acutely affected those in the harvesting and hauling business. Intense global competition means that sawmills and paper mills cannot pass price increases on to their customers. Since the fall of 2008, end product prices have declined sharply,[6] exacerbating the global competitive pressures that pervade the Maine forest products industry. These forces present formidable challenges for harvesters and haulers who are a critical part of the forest products supply chain.

<u>Technological Changes</u>

Increases in technological efficiency and productivity have steadily reduced the number of people employed in the logging industry while allowing overall harvest levels to remain roughly the same. Harvesters with chainsaws and skidders have been replaced by highly productive feller bunchers, grapple skidders and cut-to-length harvesting systems. These technological advances have made huge gains in productivity, safety and reduced environmental damage, but have also reduced the number of workers.

The major gains have also, not surprisingly, been attended by major increases in financial cost. Individual workers often own the equipment themselves (at a cost of $250,000 or more for each piece of equipment), harvesting under a subcontract with a larger contractor. Whether owned by independent owner-operators, or larger firms contracting for harvesting services, the high cost

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[4] For a more thorough review of the history and evolution of Maine's logging industry, see Pan Atlantic Consultants and The Irland Group, 1999 and Goldstein and Hillard, 2007.
[5] For a global overview, see Price Waterhouse Coopers, 2008.
[6] By January 2009, softwood lumber prices had fallen more than 50% (depending on species and grade) from their 2004-2006 peaks. Softwood market pulp had fallen by 20% or more from its August 2008 peak. Cooper, 2009.

equipment brings significantly more financial risk to harvesting contractors and requires more frequent and specialized training of equipment operators.

Changes in Worker Relationships

Harvesters in many areas of the state are now predominantly self-employed, generally getting paid by landowners strictly on a contract basis. We are told by some that the shift away from company crews and logging camps was largely complete in the 1980s, and that contracting for harvesting and hauling services has long been the norm. It is also undisputed, however, that at least one major forest landowner has employed some workers to harvest and haul in various locations at various times in recent years.

Although harvesting has long been performed under contracts, the traditional contracting model has undergone major shifts. Stumpage sales are no longer the norm except in the southern part of the state. Contract harvesting is strictly about performing a service. The landowner retains ownership of the harvested wood and sells it directly to mills and other outlets. Harvesters no longer share in the rewards when wood value is high; on the other hand, when wood values plummet, they are also not susceptible to the downside risk.

A further change within the structure of contract harvesting has been the emergence of larger, more diversified firms who often own the land and the harvesting and hauling operations. These larger independent contractors themselves may also contract with individual owner-operators as subcontractors, rather than hiring them as employees. The largest contracting firms tend to be more successful in negotiating favorable contracts than their smaller counterparts.

Questions persist as to whether the landowner/contractor relationship accurately describes the dynamic between landowners and harvesters and haulers in some instances. Evidence of workers who may be misclassified as independent contractors when they are effectively in employment relationships came anecdotally from harvesters, from our own (limited) review of contracts and from previously documented studies (OPLA, 2004). For example, a landowner may actually finance the equipment the contractors must purchase to perform services, with repayment based on the contractors' weekly earnings. Unless and until the equipment is paid off, it is very difficult for the worker to leave the relationship. Moreover, some landowners set working hours by requiring contractors to run double shifts. The contractor may have little to no ability to influence the terms of the contract. We have been told by many that there is no negotiation, that the contracts are "take it or leave it."[7]

The distinction is important because more risks and responsibilities exist for independent contractors, as opposed to those in an employment relationship (e.g. capital and maintenance costs, employee benefits such as health insurance, volatility of fuel costs, adequate harvesting opportunities). One contractor told us that he has all of the liabilities but none of the benefits of self-employment: I'd be better off to hold an auction and work for somebody else." Further shifts away from the employment model to a contracting model for harvesting and hauling services mean more risks and responsibilities for harvesters and haulers. By itself, this transfer

[7] The inability to negotiate terms might also be a result of one party having market power, but as discussed later, we are unable to draw any conclusions in that regard.

of risk may not necessarily mean lower profits and wages. However, it does mean that success for contractors requires increased business and financial skills and the ability to withstand significant fluctuations in revenues and costs.

Demographic Changes

Maine's logging industry is challenged by the same demographic developments as the Maine economy as a whole, that of an aging population and slow population growth. In the past ten years, the average age of Maine harvesters and haulers has risen considerably.[8]

- Compared to ten years prior, in 2007 a significantly higher percentage of Maine's harvesting and hauling workforce was age 45 or older (see Figure 1).

- At the same time, the percentage of harvesters and haulers aged 25-34 and 35-44 declined.

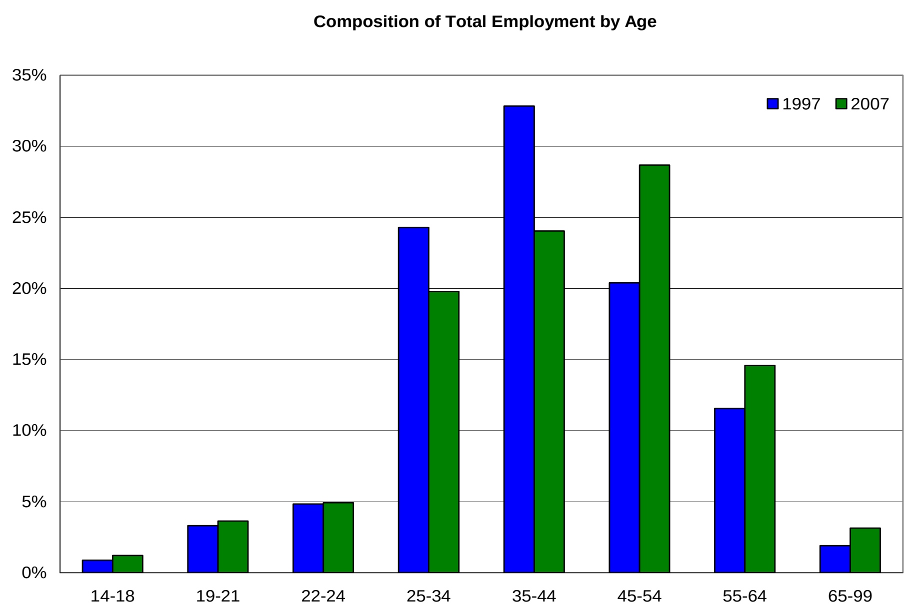

Figure 1

- As many of Maine's harvesters and haulers approach retirement age, younger, entry-level workers have not taken their place.

Social Trends

Trouble recruiting replacement harvesters stems from low wages, long commutes, physically demanding work and challenging, dangerous working conditions (Egan and Taggart 2004). Also, when today's young workers enter the labor force, they may see more alternatives to

[8] Source of data: Local Employment Dynamics, a cooperative program between the State of Maine Department of Labor, Center for Workforce Research and Information and the U.S. Bureau of Census.

harvesting than did their predecessors. The working hours required of owner-operators are unappealing to young workers and maintenance of trucks and harvesting equipment calls for longer uncompensated work hours.

Employment in goods-producing industries such as manufacturing and natural resources has fallen from half of salaried jobs 60 years ago to just 15% today, while jobs in the service sector have quadrupled. The Maine Department of Labor estimates that 94% of the 48,000 jobs projected to be created from 2004 to 2014 are in service-providing sectors. Forestry and log harvesting/hauling are projected to experience a net loss of jobs.

The Next Generation of Harvesters

All of the forces discussed above contribute to an erosion of the intergenerational nature of harvester recruitment. Two-thirds of harvesters have relatives in the business and 62% of Maine harvesters say they log because they came from a logging family. However, recent studies indicate that three-fourths of current harvesters would not encourage their children to enter the profession.[9] Current harvesters whose fathers were also harvesters are even less likely to encourage their children to enter the profession. As one contractor told us: “My son is in the Navy. I hope he stays, there’s nothing for him here.”

Market Changes

Changes in industrial demand for wood, both in total wood processed by sector and types of wood demanded, have significantly impacted the profitability of the harvesting and hauling industries. In the past ten years or so, these changes have been generally towards the processing of more low-value wood.

- Consumption of pulpwood has fallen slowly since 1995 (Figure 2). Pulpwood processing has been locally volatile due to various mill closures and restarts since about 2000, which have increased the risks borne by contract harvesters and by haulers.

- Total pulpwood use declined by 21% from 1997 to 2007, but has remained within a narrow range since 2001 (Figure 2). Consumption rebounded somewhat in 2007, but not to the levels experienced in the 1990s. Consumption exceeds Maine harvest due to net imports from nearby areas.

[9] Egan and Taggart, 2004.

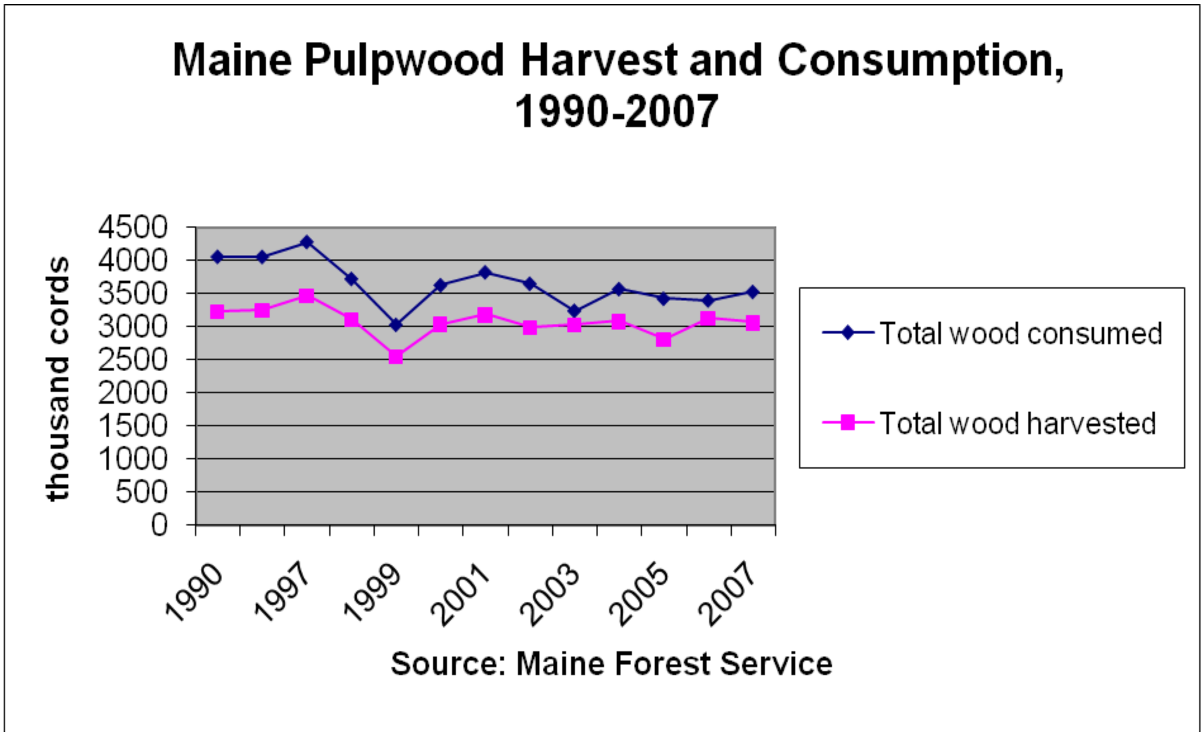

Figure 2

- After a prolonged period of growth, Maine lumber production slipped downward around 2002 following the closure of two major stud mills (Passadumkeag and Costigan) and the near-total loss of the wood turning mills. Since sawlogs are a harvester's principal profit source, these losses were a significant blow. The recent closure of the Pinkham sawmill and capacity reductions and temporary closures at other sawmills have exacerbated the situation.

- Perhaps the most significant change in recent years has been the dramatic expansion of biomass markets. The total tonnage of biomass chips processed has tripled since the market bottomed out six years ago (Figure 3). This has become an important line of business for the harvesting and hauling sector. In the past, biomass was reportedly handled at a loss which was covered by the margins earned on sawlogs. The expansion of biomass appears to have benefitted some harvesters, since it allows them to spread fixed costs over more volume. The dependence of biomass demand on public policy and oil and natural gas prices, however, likely makes it a relatively risky segment of production within the forest products industry.

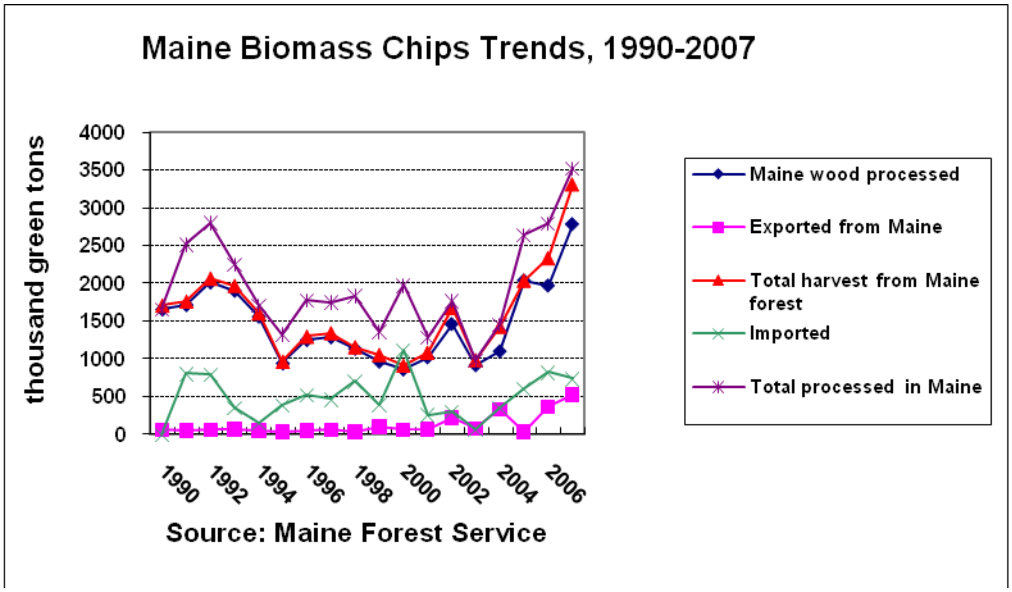

Figure 3

C. Increased Pressures on Logging Harvesters and Haulers.

The major pressures on harvesters today are ever-increasing costs of operation and the decrease in harvesting opportunities (more acres harvested to produce the same volume). These costs adversely affect contractors' profits and the compensation of their employees.

The cost-price squeeze has also intensified issues with compliance of state weight laws. Haulers repeatedly told us that rates of compensation were based on the operating costs of an overloaded truck (one that also may be running too many hours per week), since strict adherence to load and other transportation requirements usually means haulers are unable to earn enough on each load to cover costs.[10] This phenomenon is exacerbated by the lack of comprehensive, uniform enforcement of highway weight limit laws due to the shortage of Commercial Vehicle Enforcement resources within the Maine State Police. Many haulers view the risk of getting caught with an overweight load and being fined as a "cost of doing business." We are told that some landowners and contractors explicitly require strict compliance with transportation laws and have terminated relationships with independent haulers who do not comply. On the other hand, at least one source told us "you don't want to reject a load because you'll never see that guy again." Until compensation for legal loads is adequate, many haulers feel they have little choice but to haul heavy.

[10] One commenter asserts that rates are often set by distance, not weight, which creates no incentive to haul overloaded. We have no data to show how prevalent this practice is, and cannot rule out that even those rates are influenced by the lower costs of overloaded trucks.

Fuel Costs

The most prominent and contentious single cost category in recent years has been diesel fuel, which costs more in Maine than in other regions. High diesel fuel costs eat away at the bottom line of both harvesting and hauling contractors, as well as the mills.

The rapid increases of the past two years have had major impacts on costs at all levels in the supply chain (Figure 4). Whereas in the past, fluctuations in diesel fuel prices were modest and readily accommodated by six-month contract updates, they now generate major struggles over methods of adjusting payments for fuel costs.[11]

While contracts are continually modified and prices have recently fallen again, our information suggests that material risks of high fuel prices tend to be borne disproportionately by smaller, independent owner-operator contractors.[12]

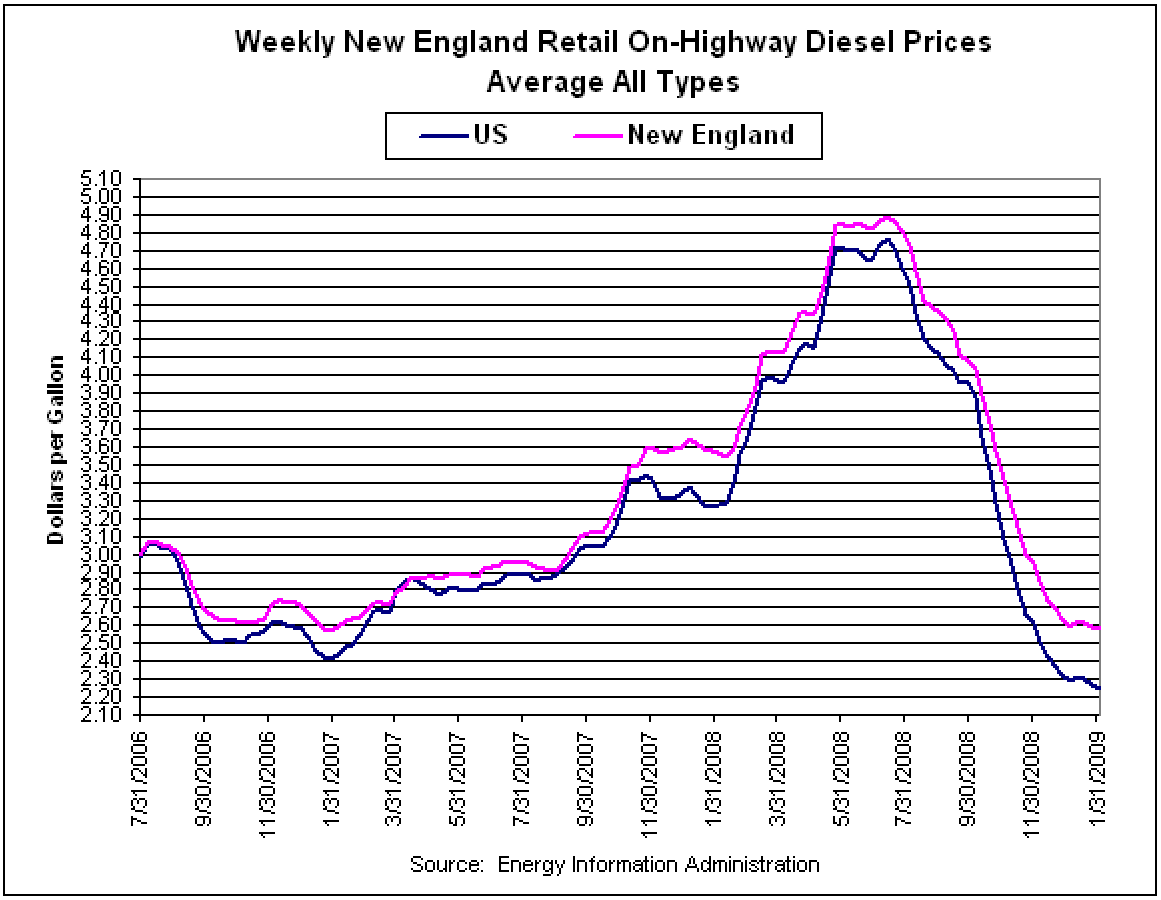

Figure 4

[11] For more information on the impact on haulers, see Eckhardt, 2006.
[12] Not only are adjustments sometimes inadequate to address the full increase in fuel costs, but also there is a lag between the time of the price increase and the adjustments, which results in deficits that may never be fully recovered.

Equipment Costs

The cost of harvesting equipment has risen dramatically in the last 20 years. The cost of purchasing and financing new equipment and replacement items, such as chains and tires, has significantly increased the overall cost of doing business for harvesters and haulers, including the cost of capitalizing a new harvesting or hauling business. The high costs of harvesting equipment and maintenance reduces efficiency and productivity as it causes many harvesting contractors to operate their equipment past its intended life. The high costs of equipment and maintenance also create a barrier to entry for potential new harvesters, as well as haulers.

Equipment Cost Trends, 2003 to 2008: Harvesting

Equipment	Approx. Cost in 2003	Approx. Cost in 2008	Percent Change	Remarks
Grapple skidder	$150,000	$200,000	33%	
set of tires (2)	$2,200	$3,200	45%	New set every year
set of chains	$2,000	$4,500	125%	New set every year
Delimber	$240,000	$340,000	42%	
new boom	$2,200	$4,000	182%	Replace every 3 years
Feller Buncher	$300,000	$400,000	33%	
Forwarder	$300,000	$400,000	33%	16 ton capacity
Processor	$400,000	$550,000	38%	
Loader unit	$135,000	$165,000	22%	Need truck

Table 1
Source: Equipment dealer interview

We are told that the intended useful life for major pieces of harvesting equipment is about four or five years (about 10,000 hours). However, due to the high replacement cost, low returns and high risks, we did not find a single example of an operator replacing equipment in the recommended timeframe.[13] Harvesters tell us that new machines do not come with cost-saving or operational enhancements that would justify the increased expense, so many operators are now running machines for eight or nine years. Others are using equipment purchased on the used market and already well past normal replacement age, measured either in years or hours.

[13] Actual useful life can vary significantly according to factors such as maintenance schedules, operator skill and terrain.

Registration data from the Maine Department of Motor Vehicles point to the same conclusion for haulers. Trucks owned by owner-operators are almost all older than five years. In describing the trend in the cost of hauling equipment, one commenter indicated that tires alone are up 50% in recent years. The recent fuel spikes (which have at this writing moderated to some degree) were felt particularly keenly by log haulers. To illustrate the impact, assume an operator makes two 50-mile round trips a day and gets 5.5 miles per gallon. That truck consumes 36 gallons of fuel each day. A one-dollar increase in fuel means a $36/day increase in fuel costs per truck. If that truck operates 200 days a year, that means a $7,200 increase in one year for one truck.[14]

Typical Equipment & Operating Costs Reported by Haulers

Expense	**Acquisition Cost**	**Annual Cost**	**Remarks**
Tractor	$115,000		• Compared to $94,000 in 2003 • Need an extra "float" truck for every 8-10 trucks to account for one in the shop
Straight-line depreciation 5-year		$18,800	
Straight-line Depreciation 8-year		$11,750	
5-year note at 8%		$23,543	
Trailer	$44,000		2006
Tires			
10 tires per tractor @ $4,000 per set		$6,000	Need 1.5 sets every year
Oil		$1,400	
Hoses		$500	
Brakes		$3,000	
Moose protection unit	$3,500		
Fuel		$28,000-90,000	Assumptions behind these reports are unknown, which may explain the wide variation.
Insurance		$6,000-10,000	

Table 2
Source: Hauler interviews

[14] It is particularly difficult for haulers to improve efficiency to help their bottom lines: total miles are determined by the customer and speed, load weights and hours of service per day and week are determined by the law. One hauler stated: "If we calculated our pay back to an hourly basis, we'd need anti-depression medication."

One consequence of an inability to replace aging equipment is rising maintenance costs. For the individual owner/operator, this usually entails considerable uncompensated time on weekends and evenings, as well as higher losses of revenue due to downtime. Another consequence is reduced productivity and/or efficiency. Rates for harvesting and contracting services are based on expected performance from up-to-date, efficient machinery. Contractors with older, under-performing equipment are at a distinct disadvantage.

In light of high equipment costs, it is not surprising that down payments in cash are not common, as even 20% down on a $450,000 item would exceed the cash resources of most harvesting and hauling firms. Instead, equipment dealers will often accept a fully owned piece of equipment as collateral in lieu of a down payment. In other capital-intensive industries, return on investment or return on equity are standard criteria for business decisions by both business owners and lending institutions. Surprisingly, this does not seem to be the case in the harvesting industry. Instead, the focus is on "debt service coverage," measured as a ratio between the net revenue a piece of equipment produces and the debt service amount, plus pro-rated owner compensation. Under the latter approach, it is difficult to plan for future capital needs.

Succeeding in this environment of high costs and low equity requires increased business and financial skills.

<u>Reduced Harvesting Opportunities</u>

In addition to rising costs, deteriorating harvesting opportunities put further negative pressure on contactors' bottom lines. The increased emphasis on partial harvesting, coupled with a reported decline in average log size, often requires harvesters to travel farther or work longer to harvest adequate volumes. Fuel, labor and equipment maintenance costs rise with the additional effort, while the volume of marketable product remains the same.

Compared to the 1980s and early 1990s, when 20 cords or more per acre were harvested, the trend toward partial harvesting and the reported decline in log size has reduced the harvest per acre. Further, several landowners and close observers of the industry suggest that the available timber on the land is growing scarcer. They cite instances of harvesting contractors scouring the landscape to fill contracts, and of large landowners reducing their annual harvests due to increasing scarcity of merchantable stands. Several sources in the northern part of the state told us that owners are cutting in more remote corners, sometimes in streamside buffers, and squeezing out remaining bits of biomass to maintain revenues. One harvester we interviewed said that he used to get an average of 400 cords per week. Now, he reports, he is lucky to get 300.

Log size is a key component of a "cutting chance" (*i.e.*, yield within a certain area – a good chance can be harvested quickly and easily). For example, cutting 1,000 trees that are 10 inches in diameter yields 100 cords of wood. If the trees are just seven inches in diameter, then the yield is just 50 to 60 cords. While costs remain roughly the same, this is almost a 50% reduction in production. This trend is not reflected in rates. One interviewee stated: "We used to be able to work 55 hours; now we must go 65 hours to get the same amount of wood."

Such reports were not universal, however. Some owners told us this is not happening in their areas. This could be due to regional differences within the state. For example, in southern Maine, merchantable wood has always been hard to source for harvesters and mills but this has been due more to lack of landowner interest in harvesting and to ongoing parcelization than to any shrinkage in the area or volume of the resource. The Maine Forest Service reports that on a statewide average, new growth is about equal to harvests, but clearly there are regional variations. Further, owners who dispute the claim that harvesting opportunities have declined may be speaking of recent years, whereas others are implicitly comparing present conditions to 20 years ago.[15] To evaluate the extent of declining harvesting opportunities, we asked landowners for data on long-term trends in such items as skidding distances and removal per acre, but have not been able to obtain sufficient comparable data on these.

The increased pressures summarized above do not affect all contract harvesters and haulers equally. One commenter opined that many private contractors who run their own logging companies are much more financially successful compared to what they might have earned as paper company employees. Our interviews suggest to us that the very largest, diversified contractors are doing well. The middle-range companies, operating a few systems, are struggling under the increased pressures, and the individual owner-operators have experienced the most difficulty.

D. Specific Issues Raised in the Resolve.

The Office of the Attorney General was tasked in Resolve, Chapter 189, to study the following issues on a statewide basis:

1. Issues of market concentration and horizontal market power.

While land concentration is fairly straightforward to measure, concentration does not necessarily indicate the presence of market power. Market power in this industry is much more difficult to measure. In addition to the gaps in data and the general lack of transparency, there are several other reasons for this.

- The different layers of compensation within the forest products industry – payments from mill owners to landowners, payments from landowners to contractors, and payments from contractors to employees or subcontractors – confound the issue.

- The difficulty in assessing a rate of return appropriate to the risks of owning very expensive pieces of equipment makes assessing what constitutes “fair” compensation very challenging, especially when the owners’ equity is small.[16]

[15] On the forest resource generally, see McWilliams *et al.*, 2005; Governor’s Wood-to-Energy Task Force Report, 2008.

[16] For a sense of the complexity, see the numerous different job classifications in the Maine Department of Labor’s annual Northeast Regional Woods Wage Survey.

- Further complicating the assessment of fair rates and whether market power is present are the difficulties in comparing different types of contracts between landowners and contractors. For example, some contracts include road building and/or snowplowing while others do not.

- The product being sold by landowners is not a uniform commodity. It is a series of differentiated products, varying by species and grade. The wood from a particular harvest operation could go to several different mills.

Review of land ownership information on file with the Maine Forest Service indicates substantial landowner concentration in certain areas of the state.

- In the Presque Isle Labor Market Area (LMA), which encompasses most of Aroostook County,[17] the largest owner controls 34% and, collectively, the top three owners control 64% of the land.

- In the Skowhegan LMA, the largest owner owns 28% of the land base, and the cumulative share of the top three owners is 54%.

- In the Calais LMA, the largest owner controls 34% of the land, the same as the largest owner in the Presque Isle LMA. The top three owners together control 50% of the timberland.

- In the Rumford LMA, the largest owner holds 19%, and the combined share of the top three is 48%.

- Several markets show shares of the top three between 22% and 36 %: Dover-Foxcroft, Millinocket, Ellsworth and Farmington.

Although we could not evaluate compensation paid to contract harvesters and haulers, we can compare rates of wages paid to logging industry employees within different areas of the state. If market power flowed from concentrated landownership, one would expect to see downward pressure on wages, as well as contract rates. Based upon a review of county-level Department of Labor wage survey data, evidence of wage compensation below market rates is not readily apparent in the areas of high landowner concentration.

HOURLY WAGES 2006

County	**Entry Level**	**Average**	**Experienced**
Piscataquis			
Logging	$13.09	$17.05	$19.02
Operating Engineer	$10.82	$12.58	$13.45
v. logging	*$2.27*	*$4.47*	*$5.57*

[17] The Presque Isle LMA includes Fort Kent to the north, extends west to the Canadian border and reaches south almost to Houlton.

Truck Driver	$10.59	$14.40	$16.30
v. logging	*$2.50*	*$2.65*	*$2.72*
Aroostook			
Logging	$13.33	$14.36	$14.88
Operating Engineer	$12.30	$13.92	$14.73
v. logging	*$1.03*	*$0.44*	*$0.15*
Truck Driver	$8.78	$12.13	$13.81
v. logging	*$4.55*	*$2.23*	*$1.07*
Oxford			
Logging	$10.22	$14.23	$16.24
Operating Engineer	$12.40	$15.69	$17.34
v. logging	*-$2.18*	*-$1.46*	*-$1.10*
Truck Driver	$12.20	$15.69	$17.43
v. logging	*-$1.98*	*-$1.46*	*-$1.19*
Franklin			
Logging	$11.99	$12.61	$12.92
Operating Engineer	$12.74	$15.46	$16.82
v. logging	*-$0.75*	*-$2.85*	*-$3.90*
Truck Driver	$12.04	$14.25	$15.36
v. logging	*-$0.05*	*-$1.64*	*-$2.44*
Somerset			
Logging	$12.95	$14.47	$15.24
Operating Engineer	$12.62	$16.89	$19.03
v. logging	*$0.33*	*-$2.42*	*-$3.79*
Truck Driver	$10.69	$15.09	$17.28
v. logging	*$2.26*	*-$0.62*	*-$2.04*
Washington			
Logging	$11.69	$14.87	$16.46
Operating Engineer	$11.23	$14.81	$16.61
v. logging	*$0.46*	*$0.06*	*-$0.15*
Truck Driver	$10.52	$14.35	$16.26
v. logging	*$1.17*	*$0.52*	*$0.20*

Table 3

Source: 2006 Maine Department of Labor Occupational Wage Survey Data

The patterns of logging industry wages depicted above are consistent with the general level of wages in Aroostook County for all occupations. For experienced workers, only Franklin County loggers earned less. For average workers, the same is true (Oxford is about even). For operating engineers, only Piscataquis County experienced operating engineers earn less than their Aroostook counterparts. With the exception of Washington County entry level workers, this trend is true for all worker categories – all counties except Piscataquis pay more than Aroostook. Truck drivers also earn higher wages in all counties compared to Aroostook County, for all wage types.

The other region of high landowner concentration is Washington County, where logger wages and experience premiums are relatively high. But logger wages are lowest in Franklin County, an area of dispersed landownership. For experienced loggers, the wage level in Somerset County, a less concentrated landownership area, is essentially the same as in Aroostook. Franklin is much less concentrated in ownership and yet has lower wages than Aroostook. Washington County has highly concentrated ownership, and arguably less competition for logs and pulpwood, yet has higher wages than Aroostook. Clearly, a great deal more than concentration of land ownership is involved in the wage-setting process.

- In all five Rim Counties (Somerset, Aroostook, Washington, Oxford, Franklin) plus Piscataquis, average harvesting wages (for employees) were at or slightly above the county average for wages in all industries.

- Harvesting wages were also compared to those of operating engineers, an occupation requiring similar levels of skills and education as harvesters, but external to the forest products industry. If market power is present, one would expect operating engineers to be paid more than their harvesting counterparts. The data did not bear this out.

Based upon wage data only, the existence of concentrated land ownership does not necessarily translate to market power or anticompetitive business practices. While our review of wage data was inconclusive, anecdotes from harvesters persist that some landowners are using market power to present "take it or leave it" contracts and pay below market compensation. As the discussions above illustrate, compensation is unquestionably low enough to present formidable challenges to the viability and solvency of many harvesting and hauling firms. However, we were not able to determine whether this is a result of market power.

2. Issues of vertical market power arising from integrated ownership or control of hauling, harvesting and other related assets.

Integration at the landowner to mill level is now almost gone in Maine.[18] In the past, a single entity generally owned the land, mills and labor force. Today, due to extensive industry land sales, this type of vertical integration is the exception and no longer the rule. Landowners are purchasing labor and selling to mills. The primary vestige of the old vertically integrated patterns is in the pulpwood markets, where longterm wood supply agreements between the old mill landowners and the new landowners preserve a link between the producer of the wood and the purchaser of the wood. It is difficult to see how that link confers on the mills market power that negatively impacts harvesting compensation.

[18] This history has been exhaustively analyzed and is not repeated here. See Irland, Hagan and Lutz, 2008.

The last remaining integrated landowner exists in northern Maine, but the extent to which market power flows from that integration is not entirely clear. Just recently, with hardwood pulpwood selling at such high prices, it would seem that an advantage may have existed at the mill level – the company as mill owner was able to retain the high earnings rather than pay a different landowner for the enhanced value of the wood. At the landowner and harvesting and hauling levels, however, the integrated landowner is similarly situated to others in the same level of distribution. Thus, any advantage is vis a vis other mills.

Similarly, integration at the landowner to labor level has decreased dramatically in Maine. With limited exceptions, those who own the land contract with harvesters and haulers (as opposed to employing them outright). Some contractors, with the resources and foresight to diversify their operations in recent years, have purchased their own land, affording them opportunities to harvest their own wood to sell when it makes business sense to do so. These contractors, generally larger and well-established, have been in a much better position to weather the recent storms of escalating costs. Their size, coupled with the ability to harvest their own wood, in some instances has afforded a certain degree of success in bargaining with landowners over prices and terms that small independent contractors often have been unable to achieve.

3. **The existence of barriers to entry into the harvesting and hauling industry, including required capitalization.**

The principal barriers to entry for harvesters and haulers today are the availability of capital to finance equipment and the ability to obtain contracts to cut or haul wood.

The dramatic rise in the costs of equipment and maintenance (as detailed above) explains, in part, why few newcomers are joining the ranks of harvesters and haulers. Not only do would-be harvesters require substantial financial resources, they also need expertise in business accounting and finance, an increasingly indispensable skill in the industry.

Further, since stumpage contracts have become less available, and harvesters are no longer employed by the large mills, they are more dependent on contracts with large landowners. Larger, high-tech equipment has made operations less mobile and harvesters are less willing to travel long distances. The result of these dynamics is that successful harvesting operations have relatively few contracts, but each contract typically involves large volumes. It is difficult for a newcomer to obtain sufficiently large contracts.

The heavy financial commitments involved in harvesting and hauling produce another effect -- they increase the difficulty of exit from the business. Owners cannot afford to park equipment with a $5,000 per month bank payment when they deem rates offered for its services inadequate. This problem is common in industries characterized by owner-operator business models.

4. **The extent to which imbalances of supply and demand create opportunities for the unreasonable exercise of market power.**

There are different views of the balance in the market for harvesting capacity. Overall, the supply of harvesters and log haulers has continued to decline. (OPLA, 2004). We heard from landowners that it is harder to find good contractors, and we heard from contractors that it is harder to find good labor. This is consistent with well-documented and persistent reports that fewer people are embracing harvesting as a career. There are also different views of the hauling market -- some operators tell us that there is a shortage of hauling capacity in the woods, but a surplus in the over the highway business.

Imbalances of supply and demand can exist at any level of the market. Today, production levels for lumber, pulp and paper are down from several years ago, a situation likely to create excess capacity. Yet, there has recently been an extraordinary level of demand for hardwood pulpwood due to world pulp market conditions. The demand has been at the limit of what the resource can produce in the short term, and of what the supply chain can harvest and deliver. If the mills buying this product possess market power, it does not appear to be doing them much good. They have been forced to pay ever-rising prices to meet their needs and also to haul wood over longer distances. At this writing, however, world market pulp prices have been falling and, with them, Maine delivered hardwood prices. This will intensify the cost-price squeeze for all.

In the market for spruce fir logs, however, declining lumber prices have driven delivered log prices down. We do not know to what extent the level of harvest has responded during the current year, but it did decline from 2006 to 2007 statewide. This decline in demand has the potential to increase landowner bargaining power over harvesting rates, because it creates excess harvesting capacity. On the other hand, it also cuts landowner gross revenues.

The markets for low-value, bulky products going into the wood fuels market have been strong, in both volumes and prices. Production was up significantly in 2007 and increased further in 2008 (Maine Forest Service). Higher fuel prices, however, have well offset any contribution increased delivered prices or volumes may have otherwise made to haulers' or harvesters' bottom lines.

Without much more detailed data, it would be impossible to say whether any recent trends in supply and demand have enabled landowners or any other market participants to exercise market power. It does seem clear, however, that any shortage in harvesting capacity within the state has not translated into market power for harvesters and log haulers. While anecdotes suggest that the largest contractors have been able to maintain the financial health of their businesses (*e.g.*, by achieving substantial protection from rising fuel costs), most contractors, and independent owner-operators in particular, have not enjoyed enhanced bargaining power.

5. **The advantages and disadvantages of altering the current market system in the harvesting and hauling of forest products.**

The entire woods industry in Maine is struggling in the face of pressures from the global market. The landowners, mills, harvesters and haulers are highly dependent on one another to make a living. Any change in the market that effects one category will necessary have a large impact on the others.

Some believe that the state is growing the same amount of wood as it harvests each year. Others believe the woods have been cut hard. Either way, there seems to be lower average product value per ton coming out of the woods. The prices are no longer being driven by the pulpwood industry as in the past. Markets for new products such as biomass do not pay as much. Biomass harvesting will not employ as many people and it is a lower value product. This situation affects everyone's bottom line.

The reality is that the mills, landowners, harvesters and haulers are tied together in a common fate. Our interviews indicate that they all well recognize their interdependence. Any external influence on market forces, such as legislative action, must be undertaken with extreme care to ensure the longterm viability of the industry as a whole. Smaller, incremental changes would likely prove more successful than a major alteration to the current market system in this fragile industry.

6. The approaches taken in other states to address similar issues.

Recent legislative initiatives have been proposed in the States of both Washington and Oregon that reflect different state regulatory approaches to counterbalance perceived market power in the forest products industry. In both instances, the recent legislative proposals addressed log hauling only, not harvesting. Washington's bills are pending; Oregon's failed in the last session.

Legislation pending in the Washington State Senate (SB 6069) would allow the state Utilities and Transportation Commission, in conjunction with the Northwest Log Truckers Cooperative, to establish advisory rates for log haulers, applicable to landowners owning at least 100,000 acres. A similar house bill (HB 2247) would authorize the state's Department of Labor and Industries to establish intrastate compensation rates for log haulers when petitioned by landowners above 100,000 acres in size or qualified unions or cooperative associations (representing at least 50 haulers in a LMA).

The Oregon legislation similarly would have authorized the Commissioner of the Bureau of Labor and Industries to establish intrastate compensation rates for log haulers when petitioned by landowners controlling 100,000 acres in a LMA or qualified unions or cooperative associations representing at least 50 haulers in a LMA. Landowners and individual haulers would have been able to contract outside of this system, as long as payment was higher than the applicable rate and there were no rates in effect for those parties.

7. The statewide market for such services.

In Maine, there is no statewide market for harvesting or log hauling services. There are, instead, regional markets. The areas where a harvesting contractor or log hauler can effectively work are circumscribed by travel distances (*i.e.*, distance from worksite to their residences and the residences of their employees.) A number of surveys show that workers are not interested in working out of camps or commuting more than 45 or 50 minutes one way to the worksite.

There are regional differences within the state. In Northern Maine, Aroostook County alone accounts for 34% of the Maine sawlogs processed in Maine and 19% of total wood production. Its share of pulpwood is lower as the area is remote from most Maine pulp mills. The four northernmost counties together account for 61% of all wood processed in Maine in 2007. This is clearly the reason for the concentration of harvesting capacity in this region; it also explains why northern Maine is often the focal point of controversy within the industry. Southern Maine, from a line roughly West Paris – Bangor – and then south along the Penobscot River, is characterized by small landownerships and correspondingly small harvesters, often solo workers who work alone in the woods. In this region, there are many highly mechanized machines running, but not typically in the large "systems" as used in the North. Harvesters are often stumpage buyers. Eastern Maine is a region with a limited number of sawmills and paper mills competing for wood, characterized by a heavily cut resource and a small workforce. Western Maine, including the Jackman region, as well as the entire zone spreading west of Moosehead Lake and up to Fort Kent, is the area in which Canadian contractors and workers have historically been prominent and much of the sawlog harvest is hauled to Canadian mills, exclusively over private woods roads.

E. Utility of Title 26, chapter 18, Rates of Compensation for Forest Products Harvesting and Hauling Services.

As of the date of this report, no forestry rate determination proceedings have been held under Maine Revised Statutes, Title 26, Chapter 18, as enacted by the 123rd Legislature in 2003. In fact, since the law's enactment, not a single request for a rate determination proceeding has been filed. It appears to be beyond dispute that at the time of the law's enactment, and still, the definition of "forest landowner" encompassed only one landowner. It is also understood that the landowner re-tooled its contracting operations such that the rate-setting provisions apparently were inapplicable.[19] Some landowners told us that the cost of the rate-setting process would be untenable within an industry that is already undergoing substantial overall cost pressures. We cannot know whether any petitions would have been filed had circumstances been different.

As has been stated, all participants in the forest products industry are reticent to share rate information. This may come from a desire to keep information confidential for purposes of bargaining or it may be from fear of being labeled a troublemaker in the industry. Moreover, would-be petitioners may see the law as impracticable because of the data that is required for a petition or because of the time that a rate proceeding would consume. Further, the length of time from petition to decision interjects uncertainty into a time-sensitive industry.

Some interviewees firmly believe that the very existence of the law has served to discipline the use of market power and improved the situation of harvesters and haulers. Under that view, the utility of the law bears little relation to whether there are actually any proceedings. Even if the law were to serve merely a deterrent purpose, however, the fact that the one landowner meeting

[19] The landowner began hiring only two large contractors per LMA and sought to employ a number of individual owner-operators; the law requires at least three harvesters within that area to file a petition.

the statutory definition currently operates in a manner that seems to render the rate-setting law inapplicable, suggests that future utility depends on a broader definition of "forest landowner."

It bears note that rate-setting in the multi-layer forest products harvesting and hauling industry would be a highly complex undertaking. The variables in type of service, who performs which services, unique attributes of individual harvesting sites, the multiple levels of contracting and the diverse products, to name a few, would make it quite complicated for contractors to devise a common bargaining position. Negotiating rates for a panoply of services is not as straightforward as agreeing to a price for a uniform commodity.

Due to our inability to obtain and analyze industry rate and other contract information, as well as the absence of actual proceedings under the law, we were unable to draw any conclusions about the statute's actual utility.

F. Recommendations.

1. Modify approach to rate-setting.

If the Legislature opts to continue a statutorily created rate-setting process, we suggest modifying the existing approach. If the process is to have any utility, we recommend it have broader applicability. Amending the definition of "forest landowner" in Title 26, section 1352(5) is one approach to making the law more amenable to use. Alternatively, we suggest applying aspects of established statutory collective bargaining models to harvesting and hauling rates. The Maine Agricultural Marketing and Bargaining Act of 1973 (Title 13, sections 1953-1965) might serve as such a model. Presently, that model applies to agricultural commodities, and expressly excludes forest products.

2. Promote better enforcement of existing laws.

We recommend adoption of mechanisms to ensure more uniform and consistent enforcement of existing laws.

a. Highway weight limits.

We were told repeatedly that the rates of compensation for log hauling are often set by the cash operating cost of an overloaded truck. Haulers believe that this is the only way to make a profit and that compliance with load limit laws is untenable and unrealistic. It is well known that, due to the scarcity of State Police commercial vehicle inspection resources, State Police enforcement of weight laws is limited. More regular enforcement of weight laws should ultimately help to raise the rates paid to haulers (by eliminating the downward pressure on rates caused by those hauling above the limits), as well as improve the safety of Maine roads. The single most frequent suggestion for addressing the problem of overloaded trucks is to prohibit mills from accepting and paying for any loads over the legal weight limit.[20] Finally, more frequent

[20]Mills weigh trucks before and after unloading. They pay based on the weight of the load. If mills limited payment to legal loads, haulers would have no incentive to overload their trucks.

inspection and certification of mill truck scales and their operation should help increase weight accuracy.

Increasing the federal load limit to allow 100,000-pound loads on Interstate-95 would also alleviate burdens on the industry.

b. Labor laws.

The classification of workers and equipment owners as independent contractors instead of employees is an ongoing public policy issue in many industries. Misclassification of workers in an employment relationship as independent contractors results not only in loss of income and benefits to the worker, but also in loss of income to worker protection programs such as unemployment insurance and workers compensation. Moreover, misclassification also results in an uneven competitive environment. Businesses that classify workers correctly, and therefore pay higher costs for labor, are competing against businesses that misclassify workers and avoid costs associated with having workers on their payrolls. Enhanced enforcement of existing classification laws could provide more equitable compensation for some harvesters and haulers presently providing services as independent contractors.

3. Transparency.

The University of Maine might be able to study the feasibility of developing, and possibly to implement, a system of voluntarily reporting production costs and for sharing best practices such as is commonly done relative to farm crops. Such a system could protect confidential information while giving harvesters and haulers reliable cost benchmarks to help improve their operations. We think this service could be of particular benefit to independent owner-operators of harvesting and hauling equipment.

4. Education.

Our interviews suggest that business expertise is a key factor in the ability of a harvesting or hauling contractor or owner/operator to bargain effectively and achieve longterm success in the industry. Economic challenges facing these contractors, such as equipment loan payments and payroll expenses, leave them disproportionately impacted by changes in the global supply and demand for wood. We strongly recommend that harvesters and haulers be provided opportunities for additional education in the business and economics of capital equipment financing and accounting. We understand that Professional Logging Contractors of Maine will be conducting seminars for its members on business and negotiating practices, and we encourage them to include financial practices in the curriculum.